The Royal College of Pathologists
Pathology: the science behind the cure

RCPath Northern Ireland Symposium 2023

Thursday 25 May 2023

Held in-person only at:
The Postgraduate Medical Centre, Belfast City Hospital, 51 Lisburn Road, Belfast BT9 7AB

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General Information

Thank you for registering to attend the in-person RCPath Northern Ireland Symposium 2023, which will be held at the Postgraduate Medical Centre, Belfast City Hospital, 51 Lisburn Road, Belfast BT9 7AB on Thursday 25 May 2023 at 9.30am.

We look forward to welcoming you at the symposium!

Certificates of attendance
Certificates of attendance will be emailed to all attendees, within a fortnight of the conference. This conference is eligible for 3 CPD credits.

Speaker presentations
Where permission has been given, speaker presentations will be available after the conference.

Feedback
A link to an online feedback form will be emailed to you after the conference, please do complete. All comments are confidential and will be taken into consideration in the development future conferences.

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Northern Ireland Symposium 2023

Thursday 25 May 2023
Postgraduate Lecture Theatre, Belfast City Hospital

09:30	**Meeting opens** Dr Gareth McKeeman, Chair, RCPath Northern Ireland Regional Council Professor Ian Young, Chief Scientific Advisor, Director of Research for Health and Social Care
09:40	**POCT – Past, Present and Potential** Dr Derek McKillop, *Consultant Clinical Scientist and POCT Manager, South Eastern Health and Social Care Trust*
10:15	**The Use of Procalcitonin Testing to Improve Antibiotic Stewardship in all-cause Respiratory Admissions** Dr Suzanna Paterson, *Belfast Health and Social Care Trust*
10:35	**Regional Pathology Network Update** Mr Ronan Strain, *Northern Ireland Pathology Network Manager*
10:45	**NI Pathology Blueprint Programme Update** Dr Michael McKenna, *Northern Ireland Pathology Network Clinical Director for Blueprint*
10:55	**College President update** Professor Mike Osborn, *President of the Royal College of Pathologists*
11:20	**Coffee Break**
11:35	**Clinical Case Study: Plumbing the DePTHs** Mr Neil Gilmore, *Belfast Health and Social Care Trust*
11:50	**Clinical Case Study: An Unusual Abdominal Mass** Dr Peter Nelson, *Consultant Medical Microbiologist, South Eastern Health and Social Care Trust*
12:05	**Emerging and re-emerging viral infections** Dr Kathy Li, *Consultant Medical Virologist, Regional Virus Laboratory, Belfast Health and Social Care Trust*
12:45	**Q&A session**
13:00	**Meeting closes** Dr Gareth McKeeman, Chair, RCPath Northern Ireland Regional Council

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Presenters

Dr Gareth McKeeman
Dr Gareth McKeeman graduated with a BSc (Hon) in Biomedical Science in 1999 before going on to a complete a PhD in 2003 (both at Queen's University Belfast). He then worked as a Research Fellow (School of Medicine, QUB) for 4 years before moving to the NHS in 2007 to start the Clinical Scientist Training Programme. During this he completed an MSc (Clinical Biochemistry with Molecular Biology, University of Surrey), and then FRCPath (Clinical Biochemistry) during Senior and Principal Clinical Scientist posts. He took up his current post as Consultant Clinical Scientist (Dept. Clinical Biochemistry, Belfast Health & Social Care Trust) in 2015, where he has oversight over the Clinical Biochemistry General Automation Labs across 3 hospital sites and is Chair of the Trust POCT committee. He is also currently Chair of the Northern Ireland Regional Council.

Professor Ian S. Young
Ian Young is Professor of Medicine at Queen's University Belfast, and Deputy Medical Director and Consultant Chemical Pathologist at Belfast Health and Social Care Trust. In addition, he is Chief Scientific Advisor to the Department of Health, Northern Ireland, and Director of Research for Health and Social Care, Northern Ireland. His main clinical and research interests are in nutrition and lipid metabolism, particularly in relation to cardiovascular disease prevention and management of patients with complex lipid disorders. He is author of over 450 published research papers. He is Past-President of the Association for Clinical Biochemistry and Laboratory Medicine, UK, and previous Chair of the Joint Committee for Traceability in Laboratory Medicine (JCTLM). He currently Chair of the UK Government's Scientific Advisory Committee on Nutrition. He is Associate Editor for the journal Clinical Chemistry, and a member of the editorial boards of a number of other international journals.

Dr Derek McKillop
Dr Derek McKillop is Consultant Clinical Biochemist at the South Eastern HSC Trust. He completed his training in the Belfast HSC Trust where he attained Fellowship of the Royal College of Pathologists. He has experience working in Industrial Research & Development, University Research and clinical biochemistry laboratories and healthcare settings within Northern Ireland. He currently chairs the Northern Ireland Pathology Network's POCT speciality forum and is leading the development of a NI POCT strategy.

Dr Suzanna Paterson
A graduate of Queen's University Belfast Medical School, Suzanna undertook a period of research at Imperial College London prior to commencing training in Medical Microbiology and Infectious Diseases in Northern Ireland.

Mr Ronan Strain
Ronan is the manager of the Northern Ireland Pathology Network. He has been working in Health & Social Care NI since 2009 following entry as a graduate. Ronan has worked across the whole system, including the Provider (Trusts), Commissioner (SPPG) & Regulatory (RQIA).
He has a real passion for quality improvement and transformation, and strive to deliver a world class health service for the population.
Outside of work, Ronan loves spending time with his family, travelling and playing / coaching GAA, football & golf.

Dr Michael McKenna

Professor Mike Osborn
Professor Michael Osborn studied medicine at Guys & St Thomas Hospitals, London qualifying in 1995. He became a member of the Royal College of Surgeons in 2000 and a Fellow of the Royal College of Pathologists in 2004. Currently he works as a consultant histopathologist for North West London Pathology at Imperial College Healthcare NHS Trust, London where he is clinical lead. His working time is divided between post-mortems, diagnostic gastrointestinal histopathology, bowel cancer screening and teaching. He runs an intercalated BSc “Humanities, Philosophy & Law” at Imperial College, London. During the COVID-19 pandemic he and colleagues at Imperial College published work relating to findings in fatal COVID-19 infection. He was elected President of the Royal College of Pathologists (RCPath) in November 2020 having previously been on the RCPath council and having had a variety of college roles including chair of their Cellular Pathology Speciality Advisory Committee and Death Investigation Committee.

Mr Neil Gilmore
Neil studied Biomedical Sciences BSc (Hons) at the University of Newcastle upon Tyne. Following this, he worked as a Medical Laboratory Assistant/Technician in Blood Sciences, Regional Fertility, and Medical Genetics, In 2017 Neil commenced STP training as a Clinical Scientist in Clinical Biochemistry in the Belfast Trust and MSc in Clinical Science at the University of Manchester. Since qualifying, he has been primarily based in the Regional Endocrinology and Regulatory Peptides Laboratory at the Royal Victoria Hospital and has recently been appointed as a Principal Clinical Scientist. Neil completed Part 1 of the FRCPath in Clinical Biochemistry in 2021 and is working towards full FRCPath. He is also the Secretary, Treasurer and Webmaster of the ACB Northern Ireland regional committee.

Dr Peter Nelson
Peter is a consultant medical microbiologist working in the South eastern health trust. His special interests include bone and joint infections and the expanding role of outpatient iv antibiotic therapy programmes. Peter enjoys teaching and collaborating with colleagues in the wider multi-disciplinary team.

Dr Kathy Li
Kathy did her undergraduate training at Queen’s University in Belfast, with degrees in microbiology and medicine. She subsequently completed my specialty training in virology in Glasgow, Scotland before joining the virology team in Belfast. Her current research interest includes using advanced sequencing technologies to characterise viral genomes; my PhD research used these techniques specifically on CMV.

Abstracts

POCT – Past, Present and Potential

Dr Derek McKillop, *Consultant Clinical Scientist and POCT Manager, South Eastern Health and Social Care Trust*

- What is POCT?
- POCT technological developments and growth.
- The potential of POCT and the investment required to maintain and enhance quality standards.

Since the establishment of the NI Pathology Network, Point of Care Testing (POCT) has evolved from being a section within Biochemistry to a standalone speciality. During this time, we have seen a continual rise in the use of POCT, driven by HSC reforms, technological advances and pandemic response. POCT devices are now more robust and less prone to error than previous generations, which has enabled their use in new and novel care pathways. However, there is increased requirement for governance and oversight to ensure patient safety. The potential to harness new POCT technologies to improve patient care, enable the vision of care in the community and provide assurance of quality through accreditation will require investment in Laboratory governance, procurement and IT teams.

The Use of Procalcitonin Testing to Improve Antibiotic Stewardship in all-cause Respiratory Admissions

Dr Suzanna Paterson, *Belfast Health and Social Care Trust*

- Procalcitonin can be used in conjunction with routine clinical tests to reduce antibiotic prescribing in patients admitted with COVID-19
- Procalcitonin testing led to a trend towords reduced use of WHO AWaRe watch group antibiotics
- Procalcitonin testing did not improve microbiological sampling - this has now been targeted in the second cycle of the audit

The Use Of Procalcitonin Testing To Improve Antibiotic Stewardship In All Cause Respiratory Admissions: A Retrospective Analysis.

Paterson S[*], Carey K, Murray EM[**], McCarron E[**], Rafferty P[#], Smyth B[#], Brady A[#], McKeeman G[**], Ryan K[**], Kidney J & Ong G[*].
* Microbiology Department Kelvin Building Royal Victoria Hospital Belfast Health and Social Care Trust
** Biochemistry Department Kelvin Building Royal Victoria Hospital Belfast Health and Social Care Trust
Department of Reparatory Medicine Mater Infirmorum Hospital Belfast Health and Social Care Trust
Pharmacy Departments Mater Infirmorum Hospital and Royal Victoria Hospital Belfast Health and Social Care Trust

Rationale: Improving antibiotic stewardship whilst simultaneously optimising patient safety is a perpetually vexing clinical conundrum, which has been compounded by the current COVID-19 pandemic. Procalcitonin (PCT) measurement has previously demonstrated utility in this regard, when combined with routine clinical investigation, in certain patient populations.

Objectives: To assess if the inclusion of PCT measurement as part of routine clinical care, instituted during a quality improvement project (QIP), increases the appropriateness of antibiotic administration.

Methods: A retrospective analysis was performed on six month interim data obtained from May to October 2021 during a QIP, which assessed the effect of PCT measurement on antimicrobial stewardship. All patients included had a primary diagnosis of respiratory illness and were analysed

both together and as COVID-19 and non-COVID-19 subgroups to assess how often antibiotics were commenced on admission, duration of treatment and appropriateness of use. Finally, as sending microbiological samples made up part of the protocol, sample sending frequency was also studied.

Results: Thirty patients were included in both the COVID-19 and non-COVID-19 baseline subgroups who did not have PCT testing performed. Fifty-two patients were included in the PCT subgroup (27 COVID-19 positive and 25 COVID-19 negative). Following introduction of PCT testing, commencement of antibiotics on admission was reduced overall and in the COVID-19 positive subgroup ($p=0.0426$ and $p=0.0446$ respectively) with a significant decrease in inappropriate antibiotic prescribing in these two groups ($p=0.011$ and $p=0.0157$ respectively) and a trend towards reduced prescribing of AWaRe watch group antibiotics such as Ceftriaxone. However, once prescribed, there was no difference in duration of antibiotic treatment or the frequency of microbiological sampling.

Conclusions: The data from this interim data analysis demonstrates that PCT measurement, when combined with routine clinical investigations in the acute respiratory setting, can be used to reduce inappropriate antibiotic prescribing. This was significantly reduced overall and in the COVID-19 positive subgroup, but lost statistical significance in the COVID-19 negative subgroup were it could be hypothesised that heterogeneity and inclusion of respiratory diseases where PCT has previously encountered difficulty in determining the presence of acute bacterial infection, may be the cause. The significant effect demonstrated in the COVID-19 positive subgroup suggests particular utility in this patient population.

Regional Pathology Network Update
Mr Ronan Strain, *Northern Ireland Pathology Network Manager*

NI Pathology Blueprint Programme Update
Dr Michael McKenna, *Northern Ireland Pathology Network Clinical Director for Blueprint*

Clinical Case Study: Plumbing the DePTHs
Mr Neil Gilmore, *Belfast Health and Social Care Trust*

- This case highlights an unusual but significant pre-analytical cause of spuriously elevated PTH, that held particular significance in a patient at increased risk of developing hyperparathyroidism
- Clinicians and laboratory professionals should be aware of this potential sampling error in patients that have undergone parathyroid auto-transplantation
- Importance of checking units on results and highlights error in interpretation that can occur without standardisation.

Background: Multiple endocrine neoplasia type 2A (MEN 2A) is a hereditary cancer syndrome caused by activating mutations in the RET proto-oncogene. MEN 2A is associated with medullary thyroid carcinoma (MTC) and increased risk of tumours in the adrenal and parathyroid glands causing phaeochromocytoma and hyperparathyroidism.

Case: Adult female patient with a history of MTC, which was treated with thyroidectomy in 2010. The patient was positive for RET gene variant. In 2013 the patient had an elevated parathyroid hormone (PTH) level of 508 pg/mL (reference range 15 – 65 pg/mL), but calcium level remained normal. Until 2020 the patient had persistently elevated PTH results by Roche method (ranging from 67 – 4489

pg/mL) while remaining normocalcaemic. Vitamin D was adequate at the time of the lowest PTH result in 2018, but repeat results showed deficiency in 2019. Paired samples sent for analysis by alternative method in 2019 obtained a result of 4489 pg/mL on Roche and 4184 pg/mL by Abbott method. Ultrasound scan found no new abnormal tissue.
Review of the patient's medical notes found that at the time of thyroidectomy, the parathyroid glands were removed and re-implanted in the patient's left forearm. On discussion with the patient, it was determined that blood samples were typically collected from the left arm due to better vein access. Paired PTH samples were requested, with a result of 3743 pg/mL from the left arm and 31 pg/mL from the right arm. Samples for PTH were to be collected from the right arm in future.

Clinical Case Study: An Unusual Abdominal Mass
Dr Peter Nelson, *Consultant Medical Microbiologist, South Eastern Health and Social Care Trust*

- Importance of close clinical and laboratory teamwork
- Role of microbiology in ward liaison

This case presentation involves a 48 year old lady who presented with an abdominal mass of unknown aetiology after clinical and radiological assessment. The patient proceeded to surgical removal of the mass to reach the ultimate diagnosis. This case highlights the importance of lab and clinical team working to provide a high level of holistic care.

Emerging and re-emerging viral infections
Dr Kathy Li, *Consultant Medical Virologist, Regional Virus Laboratory, Belfast Health and Social Care Trust*

- Forgotten infections are making a re-emergence, requiring vigilance
- Ingenuity of re-purposing antivirals, vaccines
- The importance of surveillance

The 20th century has seen a doubling of human life expectancy, partly due to improvements in public health sanitation and effective vaccines against life-threatening diseases. Smallpox was lauded as the first infectious disease to be successfully eradicated globally, driven by the coordinated efforts in vaccination campaigns. The WHO has set ambitious eradication goals for poliovirus but the nature of the vaccine and biology of the virus along with unstable geopolitics has hampered this goal. Additionally increasing belief and spread of vaccine misinformation has fuelled large anti-Vax movements around the world. The most recent pandemic has driven this polarised view, increasing the population susceptible to vaccine-preventable diseases. Lastly, the threat of the next global pandemic driven by reassortmant influenza is constant, and is especially pertinent now, in the midst of the largest outbreak of HPAI ever seen in the UK, and globally. These factors are considered in this talk focussing on the recent outbreak of MPox, the appearance of the first case of paralytic poliomyelitis in over a decade in America and global surveillance efforts.

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